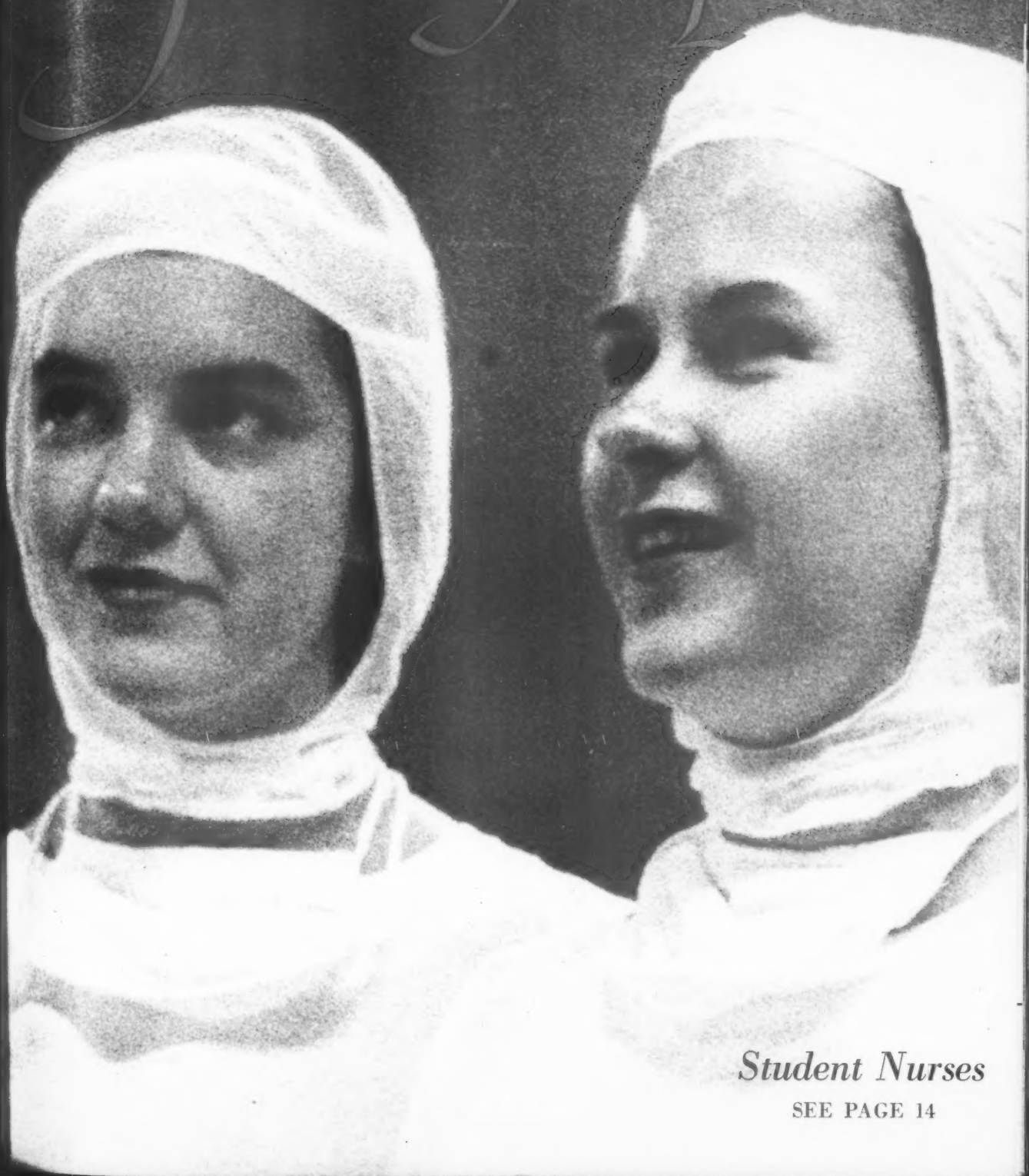
THE Johns Hopkins

March 1953



Student Nurses

SEE PAGE 14

Announcing . . .

A SPECIALLY BOUND, FINE-PAPER EDITION OF LAST MONTH'S TEXT-AND-PICTURES ESSAY

The University

With Words by JOHN MASEFIELD

Photographs by ROBERT MOTTAR *and* WERNER WOLFF

WE HAD HOPES, when we mailed the February issue of The Johns Hopkins Magazine, that our readers would share some of our excitement over John Masefield's moving statement, "The University." But, for all our hopes, we were unprepared for the great and instantaneous response which followed. Already, as this March issue goes to press, the volume of letters has exceeded any we have ever experienced.

Many writers have asked whether or not it would be possible to reprint this text-and-pictures essay in more permanent form. Reader-interest in such a project is so great that we have conferred with Waverly Press, our printers, and have decided to publish—on fine, coated paper and bound in heavy Kromekote—a special "Library Reprint."

We will be glad to mail a copy of this special edition to those readers who request it. Since we wish only to cover the estimated production expense and mailing costs (we will package the edition in an envelope and corrugated board to insure its arrival in good condition), we have set the price at a low figure: one dollar.

We must place our printing order by March 16. Therefore your prompt reply, if you wish a copy, is requested. Simply drop us a postcard telling us how many copies you desire. (Please *print* your name and address.) We will enclose a bill when we mail your copy.

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THE Johns Hopkins MAGAZINE

VOLUME IV March, 1953 NUMBER 6

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THE COVER

Marian Jones and Sarah Hering, the two young women on this month's cover, are students in their final year at the Johns Hopkins School of Nursing. When the picture was made, they were on a twelve-week training cycle in surgery. More about Miss Hering will be found in "The Education of a Student Nurse," the picture story which begins on page 14.

PHOTOGRAPH BY ESTHER BUBLEY

In This Issue

PROBERS OF THE NORTH ..... *Patrick Skene Catling* 4

Three hundred miles above the Arctic Circle, at the northernmost settlement in Alaska, researchers are exploring icy polar secrets. Here—in text and photographs—is a full report of their activities.

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The grunts and groans of the wrestlers, the drumming of basketballers' feet on hardwood courts, the steely clash of fencers' foils: attracted by such sounds, our artist has prepared a silent report.

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Here is a quick roundup of a diversity of investigations at Johns Hopkins: an attempt to control coal mines' dumping of acid into rivers; aorta surgery; a theory of ancient man; electrical research.

EDUCATION OF A STUDENT NURSE 14

The young woman who chooses nursing as her career discovers early in her training the immense satisfaction of the work. Here, in photographs by Esther Bubley, is the story of one such student nurse.

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THE JOHNS HOPKINS MAGAZINE is published monthly from October to June inclusive by the Johns Hopkins University, Baltimore 18, Maryland. Subscription, $1.00 per year; single copies, 15 cents. Entered as second-class matter at the Post Office at Baltimore, Maryland, under the Act of March 3, 1879. EDITORIAL OFFICE: The Johns Hopkins University, Baltimore 18, Maryland. ADVERTISING OFFICE: H. Addison Campbell, advertising manager, Room 1717, 595 Madison Avenue, New York 22, N. Y. Notice of change of address should reach the magazine at least thirty days before the publication date of the issue with which it is to take effect. When ordering a change of address, please enclose your present address label or a copy of it.

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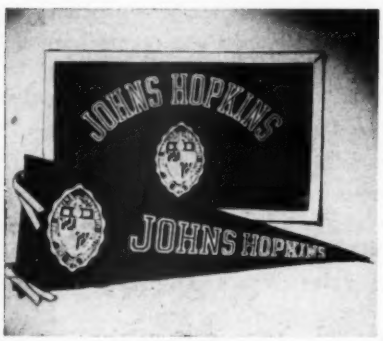

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EDITORS' NOTES
AN INFORMAL REPORT

We are often bothered by a phrase which recurs in newspaper advertising columns, particularly the theater ads. "Brought back by popular demand" is the way it usually runs, with a couple of exclamation marks thrown in to make the reader realize, we suppose, that the theater manager (or advertising copywriter) truly means what he says.

What, we frequently wonder, *is* this "popular demand"? At what point do a few whispered comments by theater patrons, overheard by an usher and duly reported to his boss, become popular—or, for that matter, demanding? Does anyone ever telephone a theater and say imperatively, "Listen here, you: bring back *Ivanhoe* or we'll boycott the place"? Or is "popular demand" simply a myth dreamed up by the impresarios when they suddenly find themselves without an attraction booked for next week and are forced to dig out an old one from the files?

All of this, as we say, has troubled us many times in the past, and that is the only reason we do not employ the phrase, complete with exclamation marks, to describe the reappearance of Aaron Sopher in our pages this month. Actually, we think that the reception which greeted Mr. Sopher's compassionate drawings of the patients in a hospital clinic, as soon as they came out in our January issue, did qualify as popular demand; but to avoid the term we will simply state that an unusual number of people let us know that they hoped Mr. Sopher's work would appear here again.

It does, beginning on page 9.

This month's Sopher drawings are in lighter vein than January's, their subject being winter sports. Mr. Sopher has been haunting the Johns Hopkins gym for the past several weeks, sketching athletes, spectators, and just about everything else in sight. His report is a full and entertaining one, and we wish that we had the room to print all of it.

Although we are forced to omit many worthwhile things from every issue (each month we experience a fresh feeling of regret over the magnificent photographs, for instance, which end up on the discard pile), in this case we are particularly unhappy about the cutting job we had to do. For when we drew up our layout, we found to our dismay that we'd have to weed out not only a number of fine pictures, but an entire branch of sports.

The missing activity is fencing. Knowing how well fencers are equipped to avenge such an affront to their honor, we hasten to make amends by publishing the drawing above.

The office of this magazine is located in a wing of the botanical greenhouse at Johns Hopkins, and occasionally the great heat maintained to keep rare plants alive in the wintertime overflows into our quarters with interesting results.

One morning last week we came in to find that apparently the high temperature had, over the years, been drying out the glue in our furniture: one of our

YOUR ATTENTION IS CALLED TO A SPECIAL ANNOUNCEMENT ON THE INSIDE COVER

desks, which the night before had been left piled high with material for this issue, had collapsed into a great heap on the floor. (We built the furniture ourselves some years ago, and to tell the truth we had been expecting a disaster like this ever since it was installed.)

We think we have managed to put everything back into its proper place, but maybe not. If you should find a line or two in the wrong spot—or perhaps even a splinter in your copy—we trust that you will treat the lapse with tolerance and good will.

It would take more space than we have here to relate the adventures of Patrick Skene Catling in gathering on-the-spot information for the Arctic Research Laboratory story which begins on the next page. In making the long trip between Baltimore and Point Barrow, Alaska, which is the farthest-north settlement on U. S. territory, he narrowly escaped boarding several ill-fated aircraft (they crashed with the loss of everyone aboard). Nothing funny about that, but some of his other experiences were less spine-chilling:

While three hundred miles above the Arctic Circle, he ran out of money (for some reason he took along only $150 for the trip). Cashing checks on a wintry tundra, 3,500 miles from home, is not the easiest financial transaction in the world, Mr. Catling found.

En route, he stopped off to witness Operation Warmwind, maneuvers conducted for U. S. troops in Alaska; while making pictures he unaccountably got a black eye (walked into a tree, *he* says). Other troubles: living on three shirts (laundry is a problem in a land where the only way to get extra water is to melt some nearby ice floes), and climbing into a weasel, a vehicle which has no doors:

Mr. Catling

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This attractive picture of Gilman Hall is now being offered to the friends of Johns Hopkins. Suitable for framing and lithographed in dark brown on heavy buff paper, this picture will serve as a beautiful remembrance of undergraduate days. A number of these lithographs have been donated to the *Hullabaloo* by the artist, H. Austin Fox, Jr., and are being sold at $3.00 apiece while the supply lasts. Please send all requests with your check or money order to:

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ALL PROCEEDS from the sale of these pictures will be used for the successful publication of the 1953 yearbook, the Hullabaloo.

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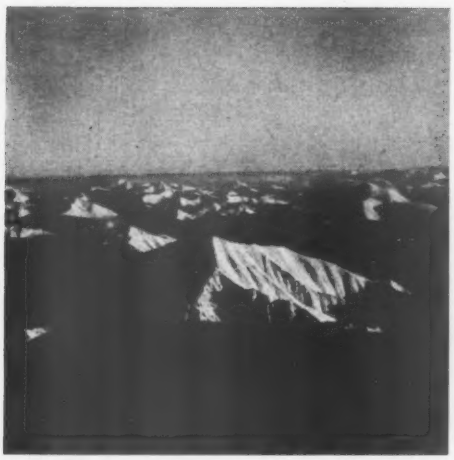
At the Barrow laboratory, many observations must be taken throughout winter. Wrapped as tightly as possible against the arctic wind, John Koranda and G. W. Prescott bore through twenty inches of ice to collect samples of freshwater algae.



Across the jagged, impenetrable Brooks Range. . .

. . . lies isolated Point Barrow, arctic outpost.

Probers Of The North

Icy secrets of the Arctic are studied by this band of scientists at our northernmost base, 300 miles above the Polar Circle

By PATRICK SKENE CATLING

Photographs for The Johns Hopkins Magazine by the Author

POINT BARROW, ALASKA

THIS is a bitter winter afternoon. A gusty north-easter is whipping up the dry powder snow. The temperature is about ten degrees below zero, which is not considered bad, but it is falling rapidly. Soon it may be in the minus forties.

Point Barrow is the farthest-north anything on United States territory. It is remote even by admission of native Alaskans, who are not easily impressed by remoteness (there being a lot of room in a territory one-fifth as large as the U. S. and inhabited by only 130,000 people). Most Alaskans live south of the Arctic Circle; Point Barrow is some three hundred miles north of that line. It is a bleak, wind-swept, flat spit of tundra jutting north between the East Siberian Sea (hostile) and the Beaufort Sea (friendly), into the Arctic Ocean. (The Arctic Ocean is impartially severe to both sides.)

Here—slightly west of Hawaii and

a long way north—is located the Arctic Research Laboratory, administered by the Johns Hopkins University for the U. S. Navy. To get from the University to the ARL (you never hear the Laboratory's full name up here; only the initials), you head up Baltimore's North Charles Street, turn left, and keep going until, roughly 3,500 miles later, you hit Fairbanks, Alaska. At Fairbanks you will come to a halt, by insistence of the Navy; it will wish to check your credentials. For ARL is situated in Naval Petroleum Reserve Number Four, a 35,000-square-mile tract of land set aside by President Harding in 1923.

Properly identified, you will be permitted to entrust yourself to a memento of World War II known as a C-46, a twin-engine aircraft whose

Zoologist W. H. Craig reads ground temperature from buried thermocouple.

Abandoned weasel track is common sight at Barrow, where motors are often disabled in heavy snow.

Craig and J. L. Bottum read in combination library, museum, and seminar room.

Max Brewer measures effect of foundations' sagging into melting permafrost.

ability safely to lift both itself and cargo is a classic subject for dispute among aviation men. Except during a few weeks in the summer when the arctic ice parts just long enough to allow freighters and landing craft to dash in with heavy supplies to last a year, the C-46 is the only way to get here.

Once across the Yukon River, you will soon come to the Brooks Range, an east-west chain of snow-covered mountains which rise, in the center, as high as ten thousand feet. Military strategists consider the range impenetrable by infantry. Bush pilots consider a plane down on the range to be irretrievably lost. You will be both nervous and awe-inspired. You will think that someone, someday, ought to fly this way again, equipped with movie camera and color film. You will simultaneously resolve that that someone will not be you.

Below, through its passes (inaccessible, as white men measure accessibility), wander primitive Caribou Eskimos, hunting the migratory animals from which they get their name. Their culture has advanced little beyond the Stone Age. You may reflect upon the fact that you are heading for another ancient Eskimo community, now neighbored by men who think in terms of field trips, laboratory tests, seminars, and Ph.D.'s; of shrimp cocktail and roast beef *au jus* on Sundays and of movies every night.

Your plane will sweep in a wide arc, out over an icebound point. Eskimos lived on this point, in half-buried whalebone huts, until the erosive encroachment of the sea forced their community to move ten miles down the westerly coast. Their new village, you may feel, as the plane makes its final approach to the airport and gives you a view, is disappointing: its small frame houses look as though they might belong to unsuccessful farmers in North Dakota. This is Point Barrow.

The Navy installation, midway between the village and the point, consists simply of a few rows of dark-gray Quonset huts and a few one-story wooden buildings; of widely dispersed radio masts, stacks of oil drums, lines of barges waiting—on ice—for next summer's Operation Barex, the freight-shipping operation; of idle weasels—the small, amphibious, tracked vehicles that can carry on where Jeeps give up—and a single strip of snow-covered steel matting on which your plane, surprisingly smoothly, will touch down.

The temperature is still dropping. The coldest ever recorded here was

A haughty husky, temporarily freed from service on eskimo sled, stares out over bleak arctic tundra.

Beside loaded weasel, Prescott and Koranda bore into frozen arctic lake.

Koranda reaches into bored hole to check on drill's progress through ice.

Koranda determines oxygen content of water collected in lake borings.

minus fifty-eight—no world's record, but cold enough. There is almost constantly a wind. That raises the "chill factor," a term currently in vogue to denote the weather's capacity for incapacitating man by cold. At sixty degrees below zero, with no wind, the chill factor is eight hundred; at only thirty below, with a fifteen-mile-an-hour wind, the chill factor is two thousand. The critical point, enough to cause frostbite unless precautions are taken, is 1,800.

At this time of year the landscape is white and blue-gray, pinkening under the setting sun. In the fall and early winter the sun rises later each day than it did the day before, and it sets earlier; by midwinter there is no daylight at all. In summer the landscape is brilliantly green with grass and blue with water. At that season, water covers forty to seventy per cent of Alaska's northern Arctic Slope. Small flowers grow rapidly on the sodden tundra then, under sunlight which, in midsummer, declines at midnight only to meet itself coming up again; daylight is continuous.

A weasel rattles explosively around the operations shack and crunches to a sudden stop nearby. A bulky figure climbs out of one of the vehicle's small windows; weasels have no doors. This man is wearing GI foul-weather gear, including thick mittens, padded trousers, and a parka with a fur-trimmed hood. On his feet are non-issue, reindeer-skin *muk-luks*, short Eskimo-made boots decorated at the calves with red and white embroidery. His breath whitens frostily; because of the long wolf-fur around the hood of his parka, it is hard to see that his nose has been reddened and his eyes moistened by the cold.

You will meet this man when you leave your plane. He will introduce himself as he swings your bags into his weasel: "I'm Bob Johnston. Welcome to Barrow." And, almost in the same frozen breath, he will say, "D'you know whether there was any mail aboard your plane?"

ROBERT C. JOHNSTON is the chief administrative assistant to Dr. Ira L. Wiggins of the Johns Hopkins University, the scientific director of the Arctic Research Laboratory. All the paperwork needed to obtain, coordinate, and record the logistic support needed for the constantly changing personnel of the Laboratory and for their research projects passes through Mr. Johnston's hands.

His office is on the second floor of one wing of the big triple-Quonset complex that houses living and working quarters for ARL's scientific investi-

A team of huskies rests in harness of sled outside Barrow Eskimo town.

Eskimo boy, who ducked out of Sunday school, poses on steps of church.

Near village, an old Eskimo woman fishes through ice hole for tomcod.

gators. The office is adjacent to the Laboratory's seminar room, which contains a small reference library and a museum of archaeological specimens found in the permafrost—permanently frozen ground—at Barrow.

Because of its functions and its location, Mr. Johnston's office radiates influence on the offices around it and, in turn, is influenced by them. Its filing cabinets serve as ARL's historical archives. This is the best place to find out about ARL's past, what ARL is, what ARL is supposed to accomplish, and how.

Soon after World War II, when the polar concept of aerial strategy was still in its infancy, the Navy showed a growing interest in improving its operating techniques in the arctic.

In August, 1946, Vice Admiral Harold G. Bowen, USN (Ret.), then Chief of Naval Research, proposed the organization of a laboratory for arctic research at Point Barrow. Barrow seemed suitable as a site because it is typical of the arctic coastal region, and for the practical reason that the Navy already had a base there supporting "Pet-4," the oil survey in Naval Petroleum Reserve Number Four. Commodore W. G. Greenman, USN, then director of Naval Petroleum Reserves, and Commander P. W. Roberts (CEC), USN, then civil engineer in charge of construction at Pet-4, both responded enthusiastically to Admiral Bowen's proposal and provided the accommodations and services that the laboratory needed.

In a statement of basic principles in its relations with civilian institutions, ONR showed itself to be a model of military-bureaucratic restraint and tolerance. Indeed, its stated principles would be endorsed by the most idealistic university board of trustees—and, one may assume, have been so endorsed.

"Research contracts," ONR pointed out, "are in the nature of partnership agreements, and offer the scientist freedom to initiate, explore, teach, and publish in carrying out basic research for the Navy.... It is believed that this procedure is one mutually beneficial to the civilian scientific fraternity and to the Navy, encouraging the scientist to conduct research in an atmosphere of scientific freedom and at the same time assuring the Navy that new knowledge is being created from which developments may later come to strengthen Naval power."

Elsewhere in this statement, ONR said:

"Freedom from security classification in fundamental research is essential to its quality and progress. As soon as fundamental work points to applications that should be classified, these lines may be detached from the main body and dealt with under appropriate security rules; but it should be remembered that secret work is costly in time and money and is often of secondary quality."

Motivated by this credo, ONR experienced no difficulty in arousing civilian scientific interest in its plans for arctic research.

Dr. M. C. Shelesnyak, representing the chief of naval research, made a preliminary reconnaissance at Barrow in February, 1947. The following August, Dr. Laurence Irving, a biologist from Swarthmore College, led a pioneer civilian research team to Barrow. Five men from Swarthmore and two from Cornell University undertook a one-year program of metabolic studies in arctic climates and set up laboratory facilities for future projects.

A Quonset hut measuring forty by twenty feet was converted into a physiological laboratory. By July, 1948, a second building was ready for use—a two-story Quonset hut, forty by one hundred feet. It had laboratories and workshops on the ground floor and a storeroom, administrative office, and library-museum-seminar room on the second floor. By midsummer, 1948, about thirty scientists and technicians were stationed at ARL engaged in arctic research. Other facilities were added as needed: more laboratories, a three-weasel garage, and a recreation room.

The Arctic Research Laboratory also operates the motor launch Ivik and, since the spring of 1952, has maintained a small subsidiary field station—a single Quonset hut—at Umiat, one of

Continued on page 25

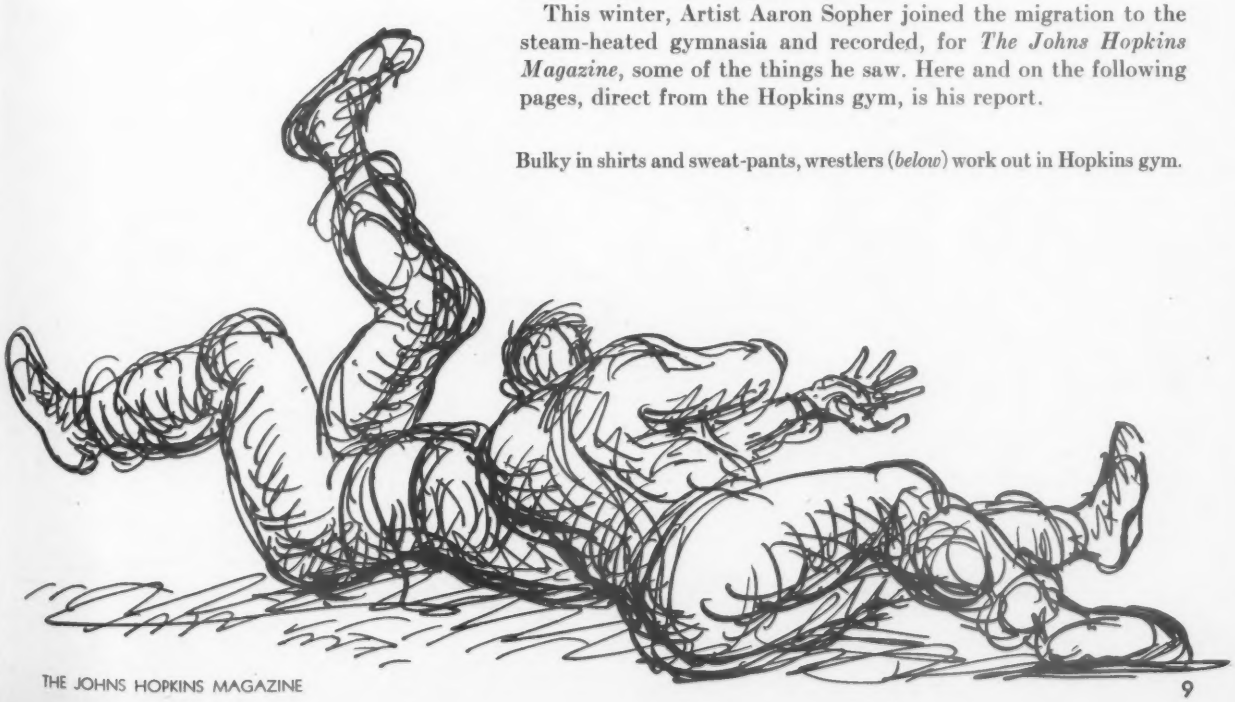
Winter Sports

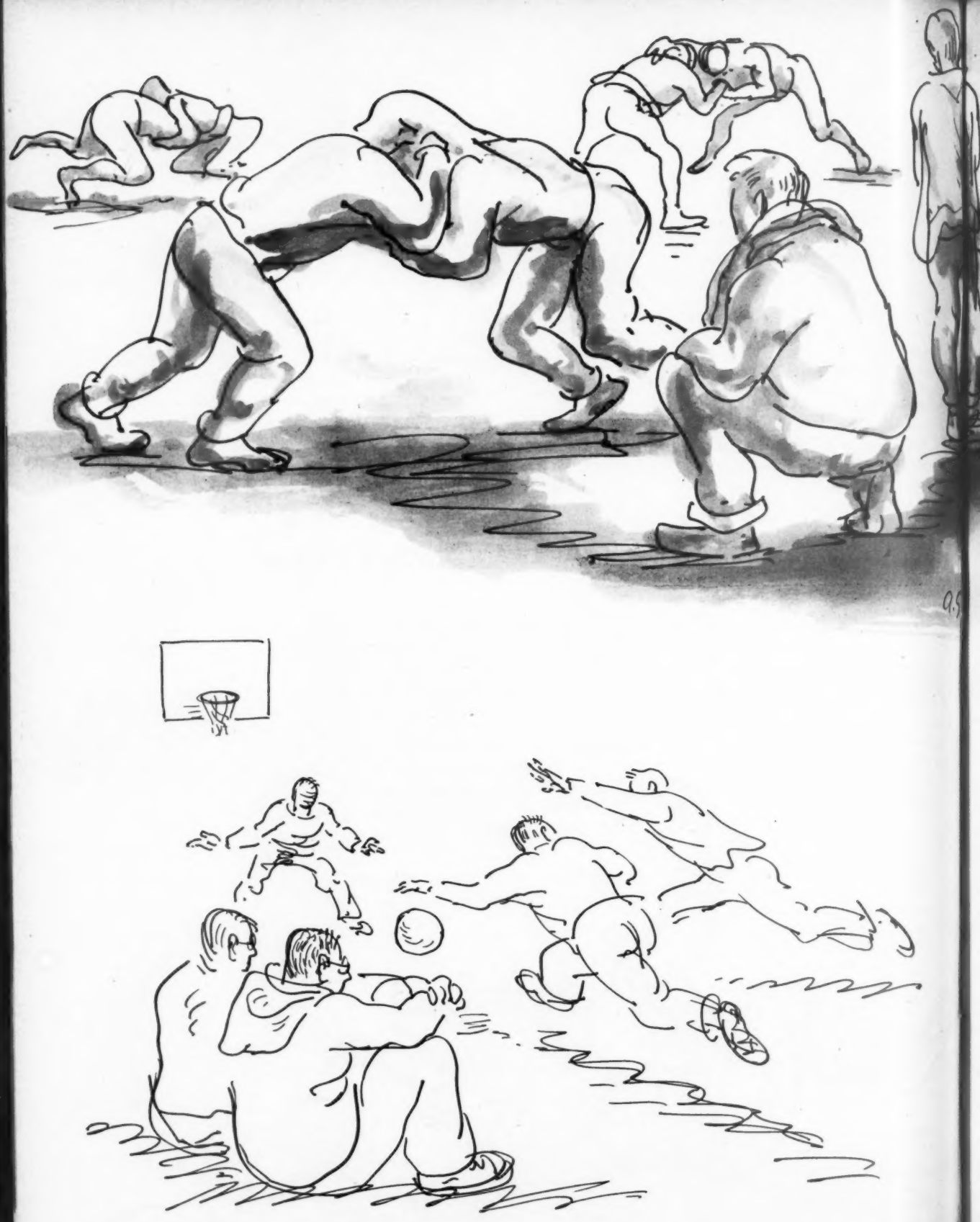
DRAWN BY AARON SOPHER

THERE comes a time in every year when faithful followers of collegiate sports begin studying their athletic schedules with great longing. This is when the first chill wind comes sweeping across the grandstands, and the teeth of the faithful chatter warningly. But studying the schedule provides consolation: soon there will be warmth. From December through mid-March, the scene of sports is the great indoors.

This winter, Artist Aaron Sopher joined the migration to the steam-heated gymnasia and recorded, for *The Johns Hopkins Magazine*, some of the things he saw. Here and on the following pages, direct from the Hopkins gym, is his report.

Bulky in shirts and sweat-pants, wrestlers (*below*) work out in Hopkins gym.





Collegiate wrestling, unlike the pro variety seen on TV, is clean and scientific. At left is a Hopkins work-out.

Basketball referees probably work harder than anyone else in the game. No substitutes ever relieve *them*.

Winter Sports *CONTINUED*

The fine thing about the indoor-sport season is that it offers something for everybody. For those athletes and spectators who like a match of strength and bodily contact, there is wrestling—which on the collegiate level is clean and scientific, almost totally unlike the professional variety to which the nation has become accustomed through TV. In contrast to wrestling, for those who enjoy a game which is speedy and open, there is basketball—attendance-wise, America's Number One sport. (*For a third pastime, fencing, see "Editors' Notes" on page 2.*)

Aside from the sport itself, there are other rewards for those who visit a college gymnasium on a winter's night. One is watching the referees (*above*). Another is responding to the cheerleaders (*below*), who, in exhorting the crowds to yell, often seem to expend more energy than the most active athlete on the floor.

The Restless Search

"The history of all human advance is the history of man's finding new problems and then finding ways to solve them."

FOUR years ago George F. Carter, chairman of the Johns Hopkins University's Isaiah Bowman School of Geography, startled archaeologists with a pronouncement that humans lived in America forty thousand years ago. This contrasted sharply with the beliefs of most archaeologists, who maintain that man did not come to this continent from Siberia until late in the last ice age, which ended only ten to twenty thousand years ago.

This winter, Dr. Carter upped his estimate greatly. Now, he says, he has evidence of man's presence here more than one hundred thousand years ago.

In a technical paper published in the winter issue of the *Southwestern Journal of Anthropology*, Dr. Carter tells of his discovery in California of flakes of rock apparently formed by blows deliberately directed by human hands. Each crude flake, although well worn, bears clear traces of localized, controlled chipping designed to fashion implements for scraping and chopping. The evidence of their great age: Dr. Carter found these man-made tools deep within gravel terraces deposited by streams before the fourth and last glacier, more than a thousand centuries ago.

Dr. Carter's report is the first claim of interglacial man in America by a reputable scientist employing a variety of research tools. Twenty years ago indications of such occupation were reported, only to be discounted by prevailing archaeological opinion as highly improbable.

Using a knowledge of the formation of soils and land forms, climatology, anthropology, botany, and the conditions and effects of glacial periods, Dr. Carter conducted research in the West and Southwest and announced in 1949 his evidence of man's presence in California at least forty thousand years ago. He followed this in 1951 with a calculation that primitive men could have dwelt in America before the fourth, or even third, glacier. He now offers his artifacts as definite proof of occupation between the third and fourth, and reinforces his theory of man on the continent prior to the third, presenting data to establish the authenticity of the artifacts and the reliability of his methods of dating the land forms in which they were found.

The tools, similar to common stones except for a distinctive flaking and chipping which cannot have occurred from natural causes, represent the crudest of cultures, Dr. Carter says. They were probably used by the forerunners of the more advanced Folsom man and his peers. (Folsom man is believed to have come to America in the final stages of the ice age as a specialized arctic hunter following game across the top of the world.)

If these more primitive men lacked the Folsom tools and tailored fur clothing necessary for survival in the North, how could they make the journey? They must have come at a time of mild climate when the land bridge between Siberia and Alaska was exposed, Dr. Carter thinks. Unable to cross during the third interglacial, when the bridge was under water, or during the third ice age, when a glacier covered the upper half of North America and made such a trip impossible, they probably entered at the onset of the third glacier. The sea level was then dropping, and for a brief period, perhaps a thousand years, a bridge would have lain exposed and the climate along a narrow Alaskan coastal corridor could have been mild. Early man, following the shoreline in search of shells and fish, then could have trickled across to become the first to live on this continent. If so, he may have been here as much as three hundred thousand years earlier than Dr. Carter's latest evidence indicates—perhaps as much as four hundred thousand years ago.

A JOHNS HOPKINS research team studying the world's toughest stream-pollution problem, the yearly seepage into rivers of billions of gallons of acid from certain types of coal mines, has discovered the chemical reaction which produces the acid and may be on the track of a method to curb it. The scientists have found for the first time why air, water, and pyrite unite in pyrite-bearing coal mines to produce, every year, more sulphuric acid than is manufactured in the entire world.

Pyrite, known commonly as "fool's gold," chemically is iron disulphide. A special form, called "sulphur balls," occurs in most soft-coal fields. To form acid, it combines with air and water in a manner which has baffled scientists for years.

It is not until man extends shafts or otherwise exposes the pyrite-bearing coal to the elements that the reaction starts. In the past, efforts have been made to seal off the shafts or to detour the affected water, but they have failed. The attempts cost millions of dollars and have been discontinued, because air and water still filtered through cracks in the earth to by-pass the blockades.

The total acid load dumped into American rivers by mines has been estimated at ten thousand tons a day, most of it from those mines containing pyrite. The main areas affected in this country are along the Appalachian Mountain chain, especially in Pennsylvania and Ohio. Each year the amount of acid increases in the streams which drain these areas, as new mines add their output and old ones continue at a steady rate. And each year the "line of neutralization"—the point at which the acid is nullified by the inflow of alkaline tributaries—moves farther and farther downstream.

Once the acid is in a stream, neutralizing it artificially is economically unfeasible. As a result, water-using industries are increasingly reluctant to build plants on the banks of rivers with a high acid content. The corrosive effects cause millions of dollars' worth of damage annually to water systems, bridges, boats, power plants, and other equipment. Anglers are affected, too: the acid "hardens" the water and drives fish downstream.

Last summer the Interstate Commission on the Potomac River Basin asked Charles E. Renn, professor of sanitary engineering at Johns Hopkins, to explore the situation. Dr. Renn invited Walter A. Patrick, professor of chemistry, to act in an advisory capacity, and the problem was tackled on a full-time

basis by Floyd W. McCollum, a graduate student in chemical engineering.

The difficulty—which Mr. McCollum, in extensive searches of the literature on the subject, found had plagued investigators in every important coal-producing nation—was to find why the acid, which is extremely hard to produce in the laboratory by mixing air, water, and pyrite, forms so readily in mines. After six weeks, Mr. McCollum had a theory which he explained to the others. Joining forces in an interdepartmental effort, they began laboratory tests along the line he suggested. The tests have supported his theory completely.

The key, they found, was the addition of a minute quantity of another chemical (as yet unnamed). This agent brings about a reaction which produces ferric hydroxide and sulphuric acid. When the two are deposited in streams, the ferric hydroxide drops out, and the acid remains.

While the addition of one chemical triggers the action, the addition of still another can stop it, the researchers found. It is their theory that this "inhibitor" can be applied within mines to prevent the acid's formation.

Actual field testing is needed to measure the practicality of their method. In the laboratory, they can start and stop the reaction—but will they be able to do the same thing in a mine? After more laboratory experiments, the investigators will make field tests in a mine which has known water sources and exits. They will determine the acidity, or pH, of water which enters the mine, apply their inhibitor, and then check the pH of the water after it leaves the mine, to see whether or not, in actual practice, they have succeeded in stopping the acid-forming reaction. Until they see the results of such tests, the three scientists who devised the method refuse to make any claims—but they have hopes.

A SURGICAL technique for treating one of the most perilous disorders of the aorta (the great artery which carries blood from the heart to the branch arteries, for distribution throughout the body) has been described by Henry T. Bahnson, a Johns Hopkins doctor who successfully performed six such operations within a few months—a record in surgical annals.

The disorder is aneurysm, a blister-like sac formed as a result of weakness or a break in the wall of a blood vessel. Aneurysms may be caused by injury or disease: auto accidents, bullet wounds, and stabbings may produce them, as may syphilis and arteriosclerosis. The weakened wall of the blood vessel puffs out, much as does a blister in the inner tube of an automobile tire; gradually it grows and fills with blood. There is danger that it may rupture at any time.

The removal of aneurysms from other arteries is often undertaken successfully, but rarely has it been done with the aorta because of the difficulty of maintaining blood circulation to vital organs, particularly the brain, while the operation is in progress. Other treatments may be effective in relieving pain and minimizing other symptoms, but little hope of permanent cure has existed.

Dr. Bahnson, who is assistant professor of surgery, has announced that two women and four men who underwent the operation last year at the Hopkins Hospital are well and seem completely recovered. Three other patients died during or soon after the operation. Death for all within a few months was practically a certainty without the surgery, Dr. Bahnson has said.

He gives credit for the recent successes to world-wide research and the resultant development of new techniques. And he believes that surgical removal of saccular aneurysm is feasible in all regions of the aorta and is the best hope of achieving a permanent cure.

FOR many years scientists have tried to determine exactly what happens at the point within the common light switch where two conductors of electricity meet to complete a circuit and allow the passage of current. They know that power is transferred from the face of one conductor to that of another, but they have never explained satisfactorily the resistance of these contacts to the flow of electricity.

The problem has been a tantalizing one. Scores of technical papers have been written to explain the resistance in terms of oxides, absorbed air, and other circumstances—but flaws have been found in all of the explanations offered.

Three years ago the Resistance Welders Manufacturers Association asked William B. Kouwenhoven, dean of the Johns Hopkins School of Engineering and professor of electrical engineering, to investigate and find, if possible, a way to control contact resistance. He and an associate, Clarence L. Little, Jr., formerly at Hopkins and now with the Allis-Chalmers Company, have come up with a number of answers —among them the long-sought equation for the control of resistance.

By testing 395 separate contacts, they succeeded for the first time in segregating the total resistance into two parts. Then they devised a way of increasing or decreasing either of them.

Drs. Kouwenhoven and Little began with the knowledge that contact between two metals can never be perfect, no matter how much they are ground and polished. Microscopic "hills" and "valleys" always remain. So the researchers sawed away all but a small central column from rods one-half inch in diameter and began testing the flow of electricity through the column and upward into the thicker rod itself. As the current moved up, the scientists calculated the amount of resistance offered by the wider portions and gave it the name "spreading resistance."

Knowing the total contact resistance and the spreading resistance beyond the face, Drs. Kouwenhoven and Little were then able to subtract to obtain the difference, or "interface resistance." This, they reasoned, is the resistance at scattered points on the faces of conductors where "hill" meets "hill." They found that it is caused by conditions at the surface and by characteristics of the metals tested.

The next step was to mill equidistant "V" grooves in the face of the contacts, the parallel ridges of one conductor running at right angles to those of the other, so that they touched at regular intervals, or contact points. Through this procedure they found that spread resistance varies inversely as the square root of the number of contact points: spread resistance of a conductor having sixteen contact points would be one-fourth of the total resistance, for instance.

This formula has worked consistently for the two researchers, and with it they have been able to control spreading resistance and, in turn, contact resistance. They have even been able to suggest a maximum number of contact points for one-half-inch-diameter contacts—1,300—and have found that their formula applies to such metals as silver, stainless steel, brass, and bronze.

The Education

Through instruction in the classroom . . .

and work in the hospital . . .

and experience with patients.

Photographs for The Johns Hopkins Magazine by Esther Bubley

on Of A Student Nurse

THIS is the story of a young woman named Sarah Hering, who has chosen to enter the field of nursing. For nearly three years she has been training at Johns Hopkins; in June, if everything goes well, she will receive her diploma and degree. Miss Hering, as she suspected three years ago and now knows full well, has not chosen the easiest possible career for herself. But, as she also knows after close association with it, it is clearly one of the most satisfying in the world. Here and on the following pages are some indications why.

a student learns to be a nurse.

Lectures and study

Sarah Hering has never paused to add up the time she has spent in lectures and libraries—not to mention the hours of poring over books and charts at night—since she first came to the Hopkins Nursing School. But the total, she is sure, would be staggering. Her first year was made up almost entirely of lab and classroom work. Now (*center*) much of her time is with patients, in the hospital itself.

Babies and rewards

Under close supervision of doctors and graduate nurses, the student in her second and third years learns to work with patients themselves. It is here that she learns first-hand how richly rewarding, in terms of opportunities to serve others, the field of nursing is. Miss Hering was on duty in the nursery when the pictures at the left were made; after twelve weeks there, she moved to surgery (*next page*).

Experience

nce

and confidence

To become familiar with the needs of patients and doctors in every branch of medicine, the student serves, in rotation, in many departments of the hospital (and, during the public-health phase of her course, works with patients in their homes, as well). When Sarah Hering moved from pediatrics to surgery, she was at first unsure of herself (*left*). But surgeons and nurses guided her patiently, carefully. In classes, she learned surgical procedure. She gained experience, and with experience came confidence. Soon she was fitting into the routine with sure smoothness: relaxing for morning coffee, washing up before an operation, helping patients in anesthesia rooms—and (*right*) pausing at day's end to cool a perspiring brow.

Candlelight and promise

Even after only a few weeks in training, the student nurse has begun to form an idea of her responsibilities. At Johns Hopkins, this point in her career is symbolized by the quietly impressive ceremony on these pages. To it she officially wears her uniform for the first time. The director of the School, Miss Anna D. Wolf, speaks. And the president of the student body, this year Sarah Hering, presides (*above*).

The solemn climax comes when a lighted candle is passed to the new group. From it, deeply conscious of the significance and promise of the gesture, each student lights a candle of her own. It is the threshold of her career. At once she is very happy and just a little scared.

A Johns Hopkins Gazette

AN UNOFFICIAL COMPENDIUM OF FACULTY AND ALUMNI APPOINTMENTS, HONORS, AND ACCOMPLISHMENTS

ALUMNI TRUSTEES

In the first annual nomination of alumni candidates for the Board of Trustees by graduates of the University (*see* The Johns Hopkins Magazine, *January, 1953*), the following were elected:

Allan C. Davis, B.A. '17, Baltimore business executive, for a four-year term.

Worth B. Daniels, M.D. '24, Washington physician, for a three-year term.

D. Mead Johnson, B.S. '36, Evansville (Ind.) business executive, for a two-year term.

John R. Bartels, B.A. '20, New York attorney and former New York Supreme Court justice, for a one-year term.

Beginning in 1954 the term of one alumni trustee will expire annually, and graduates will nominate one candidate each year for a four-year term on the Board.

BOOKS

Don Cameron Allen, Sir William Osler Professor of English, and W. R. Mueller, editors: *That Soueraine Light;* essays in honor of Edmund Spenser (Johns Hopkins Press).

George W. Elderkin, PH.D. '06 (Greek): *Zagreus in Ancient Basque Religion.*

Manfred S. Guttmacher, B.A. '19, M.D. '23, instructor in psychiatry, and H. Weihofen: *Psychiatry and the Law.*

John E. Jordan, M.A. '42, PH.D. '47 (Engl.): *Thomas De Quincey, Literary Critic.*

Sidney T. Mathews, PH.D. '49 (Hist): "Break-Through at Monte Altuzzo," Part II of *Three Battles* (volume of *U. S. Army in World War II*).

Gairdner B. Moment, FAC. '44 (Biol.), and H. V. Crouse: *Foundations of Biology: A Laboratory Handbook.*

Victor A. Najjar, associate professor of pediatrics, editor: *Carbohydrate Metabolism* (Johns Hopkins Press).

Donald W. Pritchard, assistant professor of oceanography and director of the Chesapeake Bay Institute: "Estuarine Hydrography," section of *Advances in Geophysics*, Vol. I.

Julia Randall Sawyer (Mrs. Kenneth B.), M.A. '50: *The Solstice Tree.*

William Sharpe, FAC. '11 (Surg.): *Brain Surgeon.*

Charles B. Thompson, M.D. '13, and A. P. Sill: *Our Common Neurosis.*

Julius Turner, M.A. '47, PH.D. '50 (Pol. Sci.): *Party and Constituency: Pressures on Congress* (Johns Hopkins Press).

THE FACULTY

● AMONG MEMBERS OF THE BOARD OF TRUSTEES, John J. McCloy has been named chairman of the board of the Chase National Bank. He was also elected recently to the board of directors of the American Telephone and Telegraph Company.

● PRESIDENT DETLEV W. BRONK has been named vice chairman of the National Advisory Committee on Aeronautics.

● IN THE FACULTY OF PHILOSOPHY, David M. Robinson, professor emeritus of art and archaeology, was recently honored by the presentation of his portrait to the University Club, Baltimore.

Haldan K. Hartline, professor of biophysics, has been elected to a fellowship in the New York Academy of Sciences.

J. D. H. Donnay, professor of crystallography and mineralogy, has been elected president of the Mineralogical Society of America.

Georges Poulet, professor of French literature, has been awarded the Grand Prix de la Critique by the Syndicate of French Critics in Paris. The award was presented in recognition of the originality of his method of literary criticism in his recent book, *The Inner Distance.* The book has also received the Durchon Prize in Philosophy, awarded by the Academie Française.

Henry T. Rowell, professor of Latin, has been elected president of the Archaeological Institute of America.

Douglas H. K. Lee, professor of physiological climatology, recently took part in a United Nations Food and Agriculture Organization meeting in Brazil.

● IN THE SCHOOL OF MEDICINE, Philip A. Tumulty, associate professor of medicine, has been appointed professor and head of the department of internal medicine at the St. Louis University School of Medicine. Charles Gordon Zubrod, assistant professor of medicine, will also go to St. Louis as associate professor of internal medicine in charge of experimental development, and Thomas E. Van Metre, Jr., postdoctorate fellow, will be assistant professor of internal medicine under Dr. Tumulty.

Leonard W. Jarcho, instructor in medicine, left Hopkins at the first of the year to become assistant professor of medicine at the University of Utah Medical School and assistant chief of medicine at the Veterans Administration Hospital, Salt Lake City.

Edwards A. Park, professor emeritus

ALUMNI TRUSTEES

UDEL BROS.

Allan C. Davis

of pediatrics and former head of the Harriet Lane Home, was honored by the December issue of the *Journal of Pediatrics*, which was dedicated to him. Many former associates and students here and abroad contributed papers for the edition. Francis F. Schwentker, present professor and director of the department of pediatrics, and Lawson Wilkins, associate professor of pediatrics, were guest editors of the issue.

Two instructors in psychiatry have been appointed superintendents of Maryland state mental hospitals: Robert E. Gardner, Springfield State Hospital; Isadore Tuerk, Spring Grove State Hospital.

● IN THE PAGE SCHOOL OF INTERNATIONAL RELATIONS, Owen Lattimore, director and lecturer, was granted a leave of absence with salary, following his indictment for perjury by a Federal grand jury, "until a Federal court shall have passed upon the charges."

● IN THE SCHOOL OF HYGIENE AND PUBLIC HEALTH, Leo A. Jachowski, Jr., resident associate in parasitology, has been given the Bailey K. Ashford Award in Tropical Medicine. The award was made by the American Society of Tropical Medicine and Hygiene in recognition of his work in American Samoa on the epidemiology and control of filariasis.

● AT THE SCHOOL OF NURSING, Anna D. Wolf, director, is the first president of the new Maryland League for Nursing.

THE ALUMNI

Isaac A. Abt, '86–'89 (Arts), was recently honored at a presentation ceremony in Chicago where for many years he has been affectionately known as "Chicago's baby doctor."

Charles Markell, B.A. '02, has retired as chief judge of the Maryland Court of Appeals.

George B. Wislocki, M.D. '16, FAC. '16–'17, '20–'31 (Anat.), has been elected to a fellowship in the New York Academy of Sciences. Professor of anatomy at Harvard Medical School, Dr. Wislocki is known for his work in microscopic anatomy.

William F. MacFee, M.D. '18, is now professor of clinical surgery at Cornell University.

Wilder Graves Penfield, M.D. '18, has been awarded the Order of Merit, one of Great Britain's highest honors. Long known for his distinguished work in neurology and neurosurgery, Dr. Penfield is director of the Montreal Neurological Institute.

Wincell McKendree Craig, M.D. '19, has been installed as president of the Association of Military Surgeons of the United States.

James K. Cullen, B.A. '20, has been appointed a judge of the Supreme Bench of Baltimore.

Henry E. Niles, B.A. '20, G. '20–'21 (Math.), has been appointed deputy director of the Technical Cooperation Administration (the "Point Four" program) in India. He has taken a one-year leave from his position as senior vice president of the Baltimore Life Insurance Company.

Nelson H. Rector, B.E. '21, '22–'23 (Hyg.), has retired from the Public Health Service after thirty-one years in malaria control work.

Alfred H. Burnham, B.E. '22, has been promoted to northeastern regional manager of the Locke Department, General Electric Company.

Edward F. Buchner, Jr., B.A. '23, M.D. '27, has been appointed chief of staff of the Erlanger Hospital, Chattanooga, Tenn.

T. Reese Marsh, B.A. '24, G. '24–'29 (Engl.), has been named acting dean of the new College of Adult Education at the University of Wichita.

Harold C. Urey, FAC. '24–'28 (Chem.), has been appointed Martin A. Ryerson Distinguished Service Professor of Chemistry at the University of Chicago.

Charles H. Benning, M.P.H '25, has been named health commissioner for Wilmington, Del.

David P. Shafer, B.E. '26 (Elec. Engr.), has been appointed general supervisor of operations for the Western Union Telegraph Company.

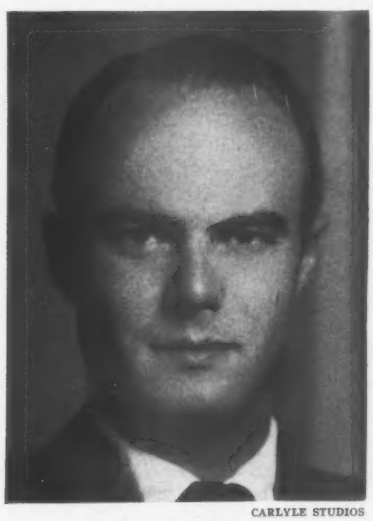
W. Nelson Young, B.E. '26, has been elected assistant vice president of Irving Trust Company, New York.

A. Cecil Snyder, B.A. '27, has been appointed chief justice of the Supreme

—elected for terms of four, three, two, and one years, respectively

WOLTZ STUDIO

Worth B. Daniels



CARLYLE STUDIOS

D. Mead Johnson

AFFILIATED PHOTO—CONWAY

John R. Bartels

Court of the Commonwealth of Puerto Rico.

Dorothy Stimson, FEL. '28–'29 (Philos.), has been elected president of the History of Science Society.

Stewart L. Smith, B.A. '30, has become the first naval attaché at the new United States Legation in Libya.

Walter Weissenborn, M.D. '32, has been named president-elect of the Hartford (Conn.) Medical Society.

Robert W. Cairns, PH.D. '32 (Chem.), G. '32–'33, has been named vice chairman of the research and development board of the United States Department of Defense. Dr. Cairns is on leave from his post as assistant director of research for the Hercules Powder Company.

Leonard A. Wennagel, B.A. '33, has been elected a second vice president of the Equitable Trust Company, Baltimore.

Robert H. Peckham, PH.D. '33 (Psych.), has been appointed director of research for the L. J. Houze Convex Glass Company.

Franklin Henry Top, C.P.H. '35, M.P.H. '39, has been appointed professor and head of the department of hygiene and preventive medicine at the State University of Iowa College of Medicine.

Ralph J. Tyser, '35–'36 (McCoy), has been named vice president in charge of sales of the Globe Distributing Company, Washington.

James Watt, M.D. '35, DR.P.H. '36, FAC. '50–'52 (Hyg.), has been named director of the National Heart Institute.

Charles C. Stock, PH.D. '37 (Physiol. Chem.), is now professor of biochemistry, Sloan-Kettering Division of Cornell University Medical School.

Guenter Schwarz, PH.D. '41 (Physics), FAC. '47–'49 (ICR), has been promoted to professor and chairman of the department of physics at Florida State University.

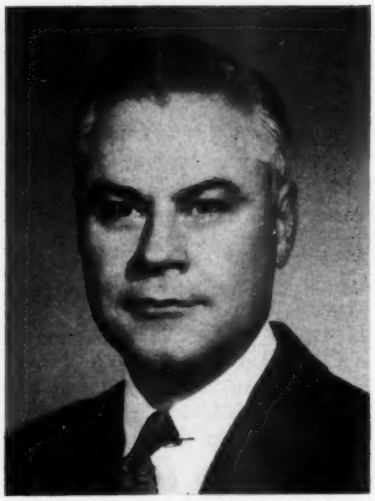
G. Jewett Crites, B.E. '42, G. '43 (Chem.), has been named manager of the vacuum furnace department of the F. J. Stokes Machine Company.

John F. Baxter, PH.D. '42 (Chem.), has become professor of chemistry and head of the inorganic division at the University of Florida.

George L. Rogosa, B.A. '44, PH.D. '49, FAC. '49 (ICR), has been appointed associate professor of physics at Florida State University.

David E. Price, M.P.H. '45, DR.P.H. '46, has been appointed to the newly-created post of assistant surgeon general of the Public Health Service.

Edward Kupka, M.P.H. '48, recently spent three months in American Samoa where he reorganized the medical care of the tuberculous and set up a tuberculosis control program. He has now returned to his regular post as chief of the bureau of tuberculosis control, California State Department of Public Health.



UNION CARBIDE AND CARBON CORP.

John Morgan Bandel

Mr. Bandel, B.E. '32, has been appointed vice president of Electro Metallurgical Company, a division of Union Carbide and Carbon Corporation.

Robert B. Sleight, FAC. '48–'52 (ICR), has taken the post of president of the newly-organized Applied Psychology Corporation, Washington.

John Z. Bowers, FAC. '48–'50 (Med.), has been named vice president of the Association of American Medical Colleges.

DEATHS

Laura Hampson Bliss (Mrs. C. W.), Grad. Nurse '03, September 13, 1952.

John Santee Brace, '46–'48 (Engr.), December 14, 1952.

Esther Miller Brosius (Mrs. Frederick W.), Grad. Nurse '21, October 5, 1952.

Moses Solomon Cohen, B.A. '94, November 27, 1952.

Edwin Grant Conklin, PH.D. '91 (Zool.), LL.D. (hon.) '40, November 20, 1952.

Charles Arthur Eby, G. '20–'24 (Hist.), June 29, 1951.

Hamilton James Eckenrode, PH.D. '04 (Hist.), September 27, 1952.

Madeleine Weeks Erickson (Mrs. Ralph L.), M.A. '21 (Hist.), December 24, 1952.

Cornelius Ferris, '85–'87 (Arts), March 21, 1952.

Robert France, B.A. '17, November 28, 1952.

John Montgomery Gambrill, FAC. '42–'46 (Hist.), January 13, 1953.

William G. Gassaway, B.A. '27, January 10, 1953.

Joseph D. Greene, B.A. '00, November 24, 1952.

Robert K. Gustafson, G. '21–'22 (Biol.), M.D. '26, FAC. '28–'29 (Surg.), December 16, 1952.

Caleb Richard Harding, PH.D. '87 (Greek), December 18, 1952.

Hilda Barnes Heilman (Mrs. Glen H.), FAC. '25–'26 (Biol.), July 1, 1952.

Frank Miller Herring, Sr., B.S. '38, December 17, 1952.

William Herbert Hobbs, PH.D. '88 (Geol.), January 1, 1953.

John J. Hopfield, STAFF '45–'51 (APL), January 8, 1953.

Carl Alfred Jacobson, PH.D. '08 (Chem.), FAC. '19–'20, December 2, 1952.

William Lee Kennon, PH.D. '06 (Chem.), December 4, 1952.

Wilbur Leslie Le Cron, B.A. '04, M.D. '08, August 18, 1952.

Maurice W. Levin, B.S. '17 (Engr.), January 12, 1953.

Edward A. Looper, FAC. '16–'21 (Ophthal.), January 14, 1953.

Daniel J. Lynch, G. '08–'09 (Physics), November 13, 1952.

Robert McCormack, '30–'34 (Educ.), December 14, 1952.

Frances McQuade, Grad. Nurse '05, September 12, 1952.

George Lee Millikan, FAC. '51–'52 (SAIS), September 6, 1952.

Carl H. Oertel, '11–'12 (Arts), December 5, 1952.

Phineas Smoller, B.A. '25, December 13, 1952.

Sidney G. Stacey, G. '89–'91, FEL. '91–'93 (Latin), January 9, 1953.

Herbert Wilhelm Stein, M.D. '40, September 13, 1952.

Charles Diehl Taylor, G. '97–'98 (Hist.), December 20, 1952.

Julius Turner, M.A. '47, PH.D. '50 (Pol. Sci.), December 24, 1952.

Lee P. Vance, '46–'47 (Arts), B.S. '50 (Bus.), November 14, 1952.

Lewis Hill Weed, M.D. '12, FAC. '14–'47 (Anat.), director of the department of anatomy '19–'47, dean of the medical faculty '23–'29, director of the School of Medicine '29–'46, LL.D. (hon.) '51, December 21, 1952.

William M. Whitten, G. '97–'98 (Chem.), December 11, 1952.

Lula Gaines Winston, PH.D. '11 (Chem.), July 24, 1952.

JOHN KORANDA

Barrow base, where Arctic Research Laboratory is located, takes on supplies during the brief summer period when boats can get in.

Probers Of The North

Continued from page 8

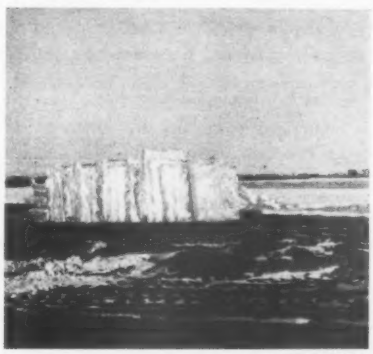
Pet-4's inland settlements. Bush planes are chartered occasionally for rapid short-range transportation and for aerial photography. Other facilities, such as the mess, theater, and gymnasium, are provided by Arctic Contractors, a civilian firm, and shared with the Navy.

Dr. G. E. MacGinitie, a biologist from the California Institute of Technology, succeeded Dr. Irving as director of ARL in the summer of 1949, at which time the administration of the laboratory became a responsibility of the Johns Hopkins University. The Laboratory's business is now cleared through the Hopkins Institute for Cooperative Research in Baltimore. Dr. Wiggins assumed command of ARL on Dr. MacGinitie's retirement from the post in August, 1950.

The Hopkins connection with ARL began early. Ellis A. Johnson, of Johns Hopkins, was one of the original members of the Arctic Research Laboratory Advisory Board, which the Navy, true to its passion for initial-words, calls "ARLAB." The board, which first met in March, 1948, now has a strong Hopkins flavor. Dr. Detlev W. Bronk, president of the University, and Dr. Wiggins are members of the nine-man board, and three of four observers attached to the board are from Hopkins—Dr. William B. Burford, III, P. Stewart Macaulay, and Mrs. Frances Schillinger (ICR). The fourth observer is from the Office of Naval Research; the other board members, not counting alternates, represent the Smithsonian Institution, the Carnegie Institution of Washington, the University of Wisconsin, the University of Pennsylvania, the Navy's Bureau of Yards and Docks, Naval Petroleum Reserves, and the Office of Naval Research.

The main functions of ARLAB, in cooperation with the National Science Foundation, are to study and appraise proposals for new projects at Barrow and to decide which ones deserve top priority. The advisory board also sees that top-flight scientists in civilian institutions know about the Arctic Research Laboratory, the help it can provide, and how a would-be investigator goes about applying for a contract.

In return for its support from the Navy, ARL submits regular reports on the findings of its member investigators. Each investigator writes a monthly report to Director Wiggins and he forwards data to the Navy.



JOHN KORANDA

Barrow Eskimos cut great ice slabs from nearby lake, melt them for drinking water.

Dr. Shelesnyak once defined ARL as "a frontier field establishment for basic scientific investigations of physical and biological phenomena related to the arctic environment." This definition has proved elastic enough to fit all the many diversified investigations that have been conducted at and around Barrow during the first five years of ARL's existence.

It is axiomatic that "battles are won by the side whose men can travel one more foot and fire one more shot," in the words of the officer who commanded an airborne infantry regimental combat team on maneuvers in Alaska this winter. The Navy undoubtedly hopes that ARL will help enable United States forces in cold countries to build efficiently, and to clothe, feed, and equip their men so that they can survive and work effectively in climatic conditions which hitherto have driven even Eskimos under cover and caused less hardy men to collapse and perish.

Possible improvements in arctic diets, clothing, and operating procedures may result from ARL research projects such as the following: "Fat metabolism in arctic animals," Charles G. Wilber, of the University of St. Louis, and X. J. Mussachia, of Fordham University; "Role of lipids in the adaptation of animals to cold," Mussachia, B. J. Sullivan, of Boston College, and Louis Susca, of New York Medical College; "Blood chemistry of Eskimos," Victor E. Levine, Yoshia Handa, L. H. Hoebelheinrich, Paul Murphy, and Carl J. Henkelmann, all of Creighton Uni-

versity; "Permafrost investigations," Gerald R. MacCarthy, Max C. Brewer, Robert F. Black, Phil Atkinson, James Knox, and S. J. Odend'hal, all of U. S. Geological Survey; "Development of arctic oceanography," John F. Holmes, William G. Metcalfe, William Butcher, David M. Owen, Lloyd D. Hoadley, Bent E. Holtsmark, and Rexford G. Rowray, all of Woods Hole Oceanographic Institution; "Tissue metabolism of arctic animals," John Field, III, and Clarence Peiss, both of Stanford University; "Respiratory exchange in man during intense muscular activity," Laurence Irving, Harold Erickson, and Gyrd Erickson, all of Swarthmore College; "Survey of fishes of northern Alaska," Norman J. Wilimovsky, James W. Boehlke, Diana Wilimovsky, and H. A. Fehlmann, all of Stanford; and "Survey of arctic wilderness areas," George Collins and Lowell Sumner, of the National Park Service.

Ornithology conceivably could have military significance someday, for birds, next to fish and mammals of the sea and land, are important as food. Being interested in local food sources for the survival of stranded sailors and airmen, the Navy has added bird-watching to its long list of approved scientific occupations. And, considering the severity of the climate, both species and specimens of birds are remarkably numerous in the arctic. The nineteen species that regularly breed near Barrow include the Snow Bunting, Arctic Loon, Glaucous Gull, and Lapland Longspur. Among the eleven species that breed here occasionally are the Canada Goose, Snow Goose, and Northern Phalarope. In addition to species already accounted for, there are six other regular migrants, including the King Eider and Kittiwake, and seventeen occasional visitants, such as the Whistling Swan, Hudsonian Curlew, Herring Gull, and Tufted Puffin—a grand total of fifty-three species, not counting birds classified as "vagrants or rare visitants."

Among the sciences that have been enriched by ARL projects of less obvious practical value to the armed services are archaeology (Eskimo artifacts a thousand years old have been found at Barrow), dendrochronology (the study of the age of trees), entomology, sociology, and anthropology.

Up to the time of ARL's October, 1952, report, more than 160 investigators, representing about thirty-five institutions, had visited Barrow on major projects, and an uncounted number of other visitors had spent short periods of time there on minor projects. The laboratory is always at its busiest during the comparatively mild summer seasons; certain investigations, however, can be conducted only during the winter, or continuously, all year around.

In November, fourteen investigators were working on six all-winter projects.

William Howard Craig, III, a zoologist from the University of Southern California, was observing "reciprocal relationships of the physical environment and vegetation of the Alaska tundra," in the absence of the director of the project, M. E. Britton, of Northwestern University. Mr. Craig's duties, as well as recording meteorological data such as those ordinarily noted by the Weather Bureau, consisted of measuring the sun's radiant energy with a pyrheliometer, observing the activities of various small fauna, and reading temperatures obtained by thermocouples above-ground, underground, and in different types of vegetation.

JOHN KORANDA

Robert R. Haubrich, from Michigan State, stands beside Laboratory's own kayak.

JOHN KORANDA

Mr. Haubrich makes chemical tests in the field. In summer, tundra grass is long.

"Lemmings and ground squirrels have no business living through the winters here," Mr. Craig comments, "but they do. We're trying to find out how they manage it." Mr. Craig is currently facilitating the survival of at least one arctic fox by feeding her fish, spare ribs, pork chops, and veal cutlets from the mess. But he threatens to terminate her life as artificially as he has been sustaining it, because she keeps chewing his electric cables. "I'm afraid she's going to have to be somebody's neckpiece," he says.

Max Brewer, who is in his third year at ARL, is continuing his permafrost and ground ice studies, which have been providing valuable information for the engineers and architects planning arctic construction. Mr. Brewer seems to derive a gloomy sort of satisfaction from pointing out the foundation-sag of Barrow Quonset huts, which were built without proper consideration of the effect of the buildings' heat on frozen ground.

Mr. Brewer is being assisted by Arthur Lachenbruch, who received his bachelor's degree in geology at Johns Hopkins in 1950, and who, in turn, is being assisted by his wife Edith, a former member of the nursing staff of the Johns Hopkins Hospital. Mr. Lachenbruch is practically and mathematically determining the conductivity of frozen ground at different temperatures, while Mrs. Lachenbruch sits at a calculating machine and patiently converts electrical-resistance figures into temperatures in degrees, and plots the results on graph paper.

The only woman now at ARL, Mrs. Lachenbruch says that she enjoys the ease of housekeeping in a half-Quonset apartment (bedroom, living room, bathroom, and no kitchen; hence, no cooking).

Dr. G. W. Prescott and J. J. Koranda are studying the ecology of the algae in Pet-4. Up to November 10 they had collected 1,200 different species of algae from local lakes and tundra. Dr. Prescott hopes to demonstrate that there is a link between arctic and alpine algae. Glaciers ten to twenty-five thousand years ago brought arctic flora with them, Dr. Prescott says. When the glaciers receded they left behind arctic flora on high cold places. He and his assistant, Mr. Koranda, plan to visit Ecuador to look for supporting evidence on the mountains there.

Another man is sitting around read

Continued on page 32

The Johns Hopkins Annual Roll Call—1952

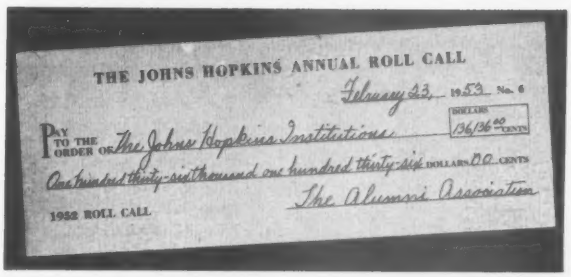
REPORT OF THE CHAIRMAN

It is with genuine pleasure that I am able to report that the 1952 Roll Call has reached a new high of $136,136. This amount represents an increase of some $16,000 over the previous Roll Call.

The many class and department agents have earned the gratitude of the University by their devotion to the work of the Roll Call. But above all, it was the individual contributor who made this result possible, and it is this same person who will have to continue to carry the financial burden. Our Hopkins Institutions already show increased vitality from the infusions financed by the loyal generosity of our contributors. We must remember that the University is now dependent on this aid and that it cannot quickly retrench by eliminating activities, if our efforts are less successful in the future.

The portion of the total raised given by the Hospital alumni is a significant factor in the result announced. This was the first year that this group took part in the campaign and their efforts deserve special mention.

The leaders in the classes and departmental groups from the standpoint of participation are the Undergraduate Class of 1905, Mr. Robertson Griswold, agent—92.1%; the School of Medicine Class of 1933, Dr. C. Bernard Brack, agent—87.3%; and the School of Higher Studies Department of German, Dr. Taylor Starck, agent, and Department of Oriental Seminary, Dr. Frank R. Blake, agent, with participations of 30.4% and 30.1% respectively. Honors for the greatest totals go to the Undergraduate Class of 1906, Mr. William A. Dickey, Jr., agent—$6,476.50; the School of Medicine Class of 1930, Dr. James N. Brawner, agent—$2,508.00; and the School of Higher Studies, Department of Chemistry, Dr. Harry N. Holmes, agent—


THE JOHNS HOPKINS ANNUAL ROLL CALL
February 23, 1953 No. 6
DOLLARS
136/36 00 CENTS
PAY TO THE ORDER OF The Johns Hopkins Institutions
One hundred thirty-six thousand one hundred thirty-six DOLLARS 00 CENTS
1952 ROLL CALL
The Alumni Association

$3,934.25. Particular mention should be made of the Special Students alumni who amassed a total of $4,423.00.

In the interest of economy and following the procedure inaugurated several years ago, lists of the donors' names (but not the amounts of their gifts) will be sent to all alumni for their respective classes or groups.

Despite the gratifying fact that the 1952 Roll Call had the greatest total to date, there was no rise in the percentage of participation. Since the emphasis of the Roll Calls has been on the number of donors rather than the size of their gifts, I would recommend that the classes and groups low in participation take steps to correct this condition.

It has been a privilege for me to act as chairman of the Executive Committee for the past two years. As I pass the responsibilities and privileges of the Chairman on to new and capable hands, I urge you all to continue and to increase the support you have been giving to our Hopkins Institutions through the Annual Roll Calls.

Sincerely,
ELI FRANK, JR.

EXECUTIVE COMMITTEE

ELI FRANK, JR., A.B. '22, *Chairman*

MARY ADAMS, B.S. '25, M.A. '30
WARDE B. ALLAN, Faculty
CARL BASSETT, B.S. '49
ALFRED BLALOCK, M.D. '22
ALLAN W. FREEMAN, M.D. '05
HOWARD A. FREY, B.E. '26
PALMER H. FUTCHER, M.D. '36
JOHN C. HUME, M.P.H. '47
JENNIE SULLI MASON, R.N. '34
ROBERT G. MERRICK, A.B. '17, Ph.D. '22
JOHN R. SHERWOOD, A.B. '23
DOUGLAS C. TURNBULL, B.E. '24
J. H. FITZGERALD DUNNING, A.B. '24, Ph.D. '27, *ex officio*
P. STEWART MACAULAY, A.B. '23, *ex officio*
OSMAR P. STEINWALD, B.S. '28, *ex officio*

J. ALBERT DURGOM, A.B. '27, *Chairman, New Jersey Region*
W. NELSON YOUNG, B.E. '26, *Chairman, New York Region*
FERDINAND KAUFHOLZ, JR., B.E. '29, *Chairman, Washington Region*

SUPPLEMENT

GROUP AND CLASS STATISTICS

The Johns Hopkins Annual Roll Call is the continuing effort of the alumni of The Johns Hopkins University and Hospital to provide support for the basic work of both institutions. In addition, during the past year many Baltimore alumni have made substantial contributions to the Baltimore campaign of The Johns Hopkins Fund which was initiated by these institutions in order to undertake a long-range development program.

To give appropriate recognition of such gifts by alumni, actual payments to The Johns Hopkins Fund as of January 1, 1953 are shown by the various groups and classes in a separate column. In this way, it is hoped to emphasize the basic importance of The Annual Roll Call, as well as to acknowledge suitably the generosity of the alumni in support of The Johns Hopkins Fund.

Group	Agent	ROLL CALL				JH FUND
		Donors	Total	Partic.	Aver.	Total
UNIVERSITY						
Undergraduate Classes	(Listed by classes below)	2,745	$ 45,859.34	27.1%	$16.70	$23,050.63
School of Medicine Classes	(Listed by classes below)	1,793	51,673.05	54.5%	28.86	8,364.82
School of Higher Studies	(Listed by depts. below)	1,470	16,284.49	19.7%	11.08	675.83
School of Hygiene and Public Health:		344	3,947.92	13.0%	11.48	680.41
Hygiene	Dr. Gilbert F. Otto	*203*	*2,538.17*	*15.4%*	*12.50*	*281.66*
Public Health	Dr. Paul A. Lembcke	*141*	*1,409.75*	*10.6%*	*10.00*	*398.75*
McCoy College	Mr. William G. Ewald Miss Julia F. Hoopper Miss Mabel K. Korber Mr. Robert C. Lloyd Mr. Thomas E. Marburger	449	1,868.91	10.3%	4.16	
Art as Applied to Medicine Department	Mrs. Ranice Birch Davis	51	433.00	37.2%	8.49	
Faculty	Dr. Elmer V. McCollum	239	3,349.28	10.9%	13.90	13,850.35
Specials Committee	Mr. Eli Frank, Jr.	138	4,423.00	14.3%	32.28	13,277.50
Applied Physics Laboratory Staff	Dr. Ralph E. Gibson	54	416.50	19.9%	7.71	
Institute for Cooperative Research Staff	Dr. Arthur Ruark	16	89.00	10.5%	5.56	
Parents	Mr. Paul Hornick	95	2,533.00	7.6%	26.66	
Friends of Hopkins	Mr. Eli Frank, Jr.	186	1,544.00		8.30	
TOTAL		**(6,493)**	**$132,421.49**	**22.7%**	**$20.38**	**$59,899.54**
HOSPITAL						
Administration (present and former members)	Mr. Colin W. Churchill	5	165.00	14.7%	33.00	785.84
Staff (present and former members)	Dr. Warde B. Allan	120	1,597.50	16.7%	13.31	14,963.06
School of Nursing Alumnae	Mrs. Jennie Sulli Mason	265	1,936.01	10.5%	7.31	5.00
School of Dietetics		3	16.00		5.33	
TOTAL		**393**	**$ 3,714.51**	**11.9%**	**$9.45**	**$15,753.90**
GRAND TOTAL		**6,886**	**$136,136.00**	**22.5%**	**$19.77**	**$75,653.44**

UNDERGRADUATE SCHOOL CLASSES

Class	Agent	ROLL CALL				HOPKINS FUND TOTAL
		Donors	Total	Particip.	Average	
Old Guard	Mr. Eli Frank, Jr.	1	$10.00	50.0%	$10.00	
1886	* Dr. Alfred R. L. Dohme	1	10.00	50.0%	10.00	
1887	Dr. George L. Hendrickson	2	20.00	66.7%	10.00	
1888	Dr. John White	3	62.50	75.0%	20.83	
1889	Dr. Ross G. Harrison	5	205.00	83.3%	41.00	
1890	Mr. Sylvan H. Lauchheimer	2	65.00	40.0%	32.50	

* *Deceased*

Continued on next page

UNDERGRADUATE SCHOOL CLASSES—(*Continued*)

Class	Agent	ROLL CALL				HOPKINS FUND TOTAL
		Donors	Total	Particip.	Average	
1891	Mr. Randolph Barton, Jr.	2	30.00	25.0%	15.00	
1892	Mr. Lester L. Stevens	10	411.00	66.7%	41.10	
1893	Hon. Jacob M. Moses	8	172.50	61.5%	21.56	$250.00
1894	Dr. Ernest J. Becker	12	375.00	42.8%	31.25	125.00
1895	Dr. Campbell E. Waters	10	407.00	45.5%	40.70	
1896	Mr. Robert Lacy	12	228.00	58.6%	19.00	
1897	Sen. George L. Radcliffe	14	253.50	53.8%	18.11	16.67
1898	Mr. Thomas Fitzgerald	5	62.00	20.0%	12.40	
1899	Dr. John C. French	5	185.00	25.0%	37.00	
1900	Dr. Ronald T. Abercrombie	18	735.00	58.1%	40.83	5,000.00
1901	Mr. John M. Bandel	14	413.50	48.3%	29.54	
1902	Mr. Joseph Townsend England	22	729.50	73.3%	33.16	2,000.00
1903	Mr. Harry King Tootle	19	395.50	54.3%	20.82	
1904	Mr. Reginald S. Opie	6	125.00	37.5%	20.83	250.00
1905	Mr. Robertson Griswold	23	674.00	92.1%	29.30	5,200.00
1906	Mr. William A. Dickey, Jr.	26	6,467.50	65.0%	248.75	500.00
1907	Dr. George A. Stewart	25	395.50	59.5%	15.82	112.50
1908	Mr. J. Purdon Wright	20	832.50	52.6%	41.63	1,000.00
1909–10	Dr. Hamilton Owens	19	332.50	42.2%	17.50	100.00
1911	Mr. Edward D. Martin	16	1,237.50	48.5%	77.34	25.00
1912	Dr. Frederic C. Lee	21	557.50	45.7%	26.55	250.00
1913	Mr. George M. Gillet, Jr.	16	277.50	36.4%	17.34	180.00
1914	Mr. Guy T. O. Hollyday	29	1,032.50	53.7%	35.60	201.66
1915	Mr. William A. Baker	15	477.50	34.1%	31.83	2,250.00
1916	Mr. Thomas J. Tingley	23	322.50	39.0%	14.02	83.34
1917	Mr. John C. Knipp	35	1,845.00	36.8%	52.71	550.00
1918	Mr. J. Jefferson Miller	30	458.00	33.0%	15.27	310.00
1919	Mr. Ferdinand Meyer	35	560.00	36.1%	16.00	486.46
1920	Mr. Hamilton C. Davis	40	848.00	29.4%	21.20	100.00
1921	Mr. Kent R. Mullikin	66	1,370.00	43.4%	20.75	50.00
1922	Mr. Joseph A. Naviasky	44	1,244.50	23.8%	28.28	
1923	Dr. Paul W. Bachman	72	2,180.50	33.3%	30.28	575.00
1924	Mr. John H. Croker	66	1,665.00	30.7%	25.23	875.00
1925	Mr. William P. Calhoun	66	953.00	29.6%	14.44	142.50
1926	Mr. Carroll M. Berndt	73	931.50	34.8%	12.76	225.00
1927	Mr. Charles F. Reese	78	1,148.00	39.2%	14.72	12.50
1928	Mr. David Kaufman	81	2,471.01	28.0%	30.51	360.00
1929	Dr. J. Hamilton Allan	89	985.50	36.0%	11.07	558.33
1930	Mr. C. Corner Brownley	79	900.75	29.4%	11.40	335.00
1931	Mr. Edwin M. Lockard	66	648.50	31.9%	9.82	
1932	Mr. Lorne R. Guild	95	981.50	42.8%	10.33	15.00
1933	Mr. Ernest H. Hanhart	62	657.50	24.6%	10.60	13.34
1934	Mr. Church Yearley	77	739.50	26.1%	9.60	33.33
1935	Mr. David P. Gordon	77	628.75	25.2%	8.17	33.33
1936	Mr. J. Bennett Spang	71	617.50	26.7%	8.70	3.75
1937	Mr. Roy L. Hartman	72	862.93	27.6%	11.99	787.50
1938	Lt. Col. Edward W. Clautice	71	519.00	26.1%	7.31	13.75
1939	Mr. Lewin Wethered	47	341.50	19.0%	7.27	1.67
1940	Mr. Edgar G. Frey	77	517.50	27.0%	6.72	25.00
1941	Dr. Elmer Hoffman	53	347.00	17.9%	6.55	
1942	Mr. Morgan H. Pritchett	48	351.00	21.0%	7.31	
1943 (Feb.)	Mr. Michael G. Callas	54	398.00	25.4%	7.37	
1943 (Oct.)	Mr. Floyd L. Culler	29	216.50	30.9%	7.47	
1944	Mr. Kenneth H. Grim	33	146.50	21.4%	4.44	
1945	Dr. Arnold Harberger	11	77.00	11.0%	7.00	
1946	Dr. Jose E. Medina	13	72.00	7.0%	5.54	
1947	Mr. Robert H. MacGill	42	206.00	16.5%	4.90	
1948	Mr. U. S. Grant Peoples	72	354.50	18.7%	4.92	
1949	Mr. Louis V. Koerber	169	705.40	30.0%	4.17	
1950	Mr. Quintus A. Langstaff	110	734.00	16.0%	6.67	
1951	Mr. Richard A. Nussbaum	75	379.50	14.6%	5.06	
1952	Lt. Robert H. Scott	63	295.00	14.8%	4.68	

GROUP AND CLASS STATISTICS—*(Continued)*

SCHOOL OF MEDICINE CLASSES

Class	Agent	ROLL CALL				HOPKINS FUND TOTAL
		Donors	Total	Particip.	Average	
1897	Dr. Guy L. Hunner	3	$50.00	60.0%	$16.67	
1898	Dr. Joseph H. Pratt	5	85.00	83.3%	17.00	
1899	Dr. John A. Luetscher	5	170.00	55.5%	34.00	
1900	Dr. Herbert W. Allen	9	342.00	60.0%	38.00	
1901	Dr. Edward H. Hume	8	526.30	61.5%	65.79	$16.67
1902	Dr. Stephen Rushmore	12	475.00	60.0%	39.58	
1903	Dr. G. Canby Robinson	11	460.00	45.8%	41.82	433.34
1904	Dr. DeWitt B. Casler	11	165.00	47.8%	15.00	3.33
1905	Dr. Douglas VanderHoof	17	460.00	70.8%	27.06	33.33
1906	Dr. Frank Hinman	19	1,738.00	48.7%	91.47	62.50
1907	Dr. Paul W. Clough	18	892.50	50.0%	49.58	25.00
1908	Dr. Cecil W. Vest	16	375.00	44.4%	23.44	
1909	Dr. William L. Estes, Jr.	20	485.00	71.4%	24.25	250.00
1910	Dr. L. Whittington Gorham	29	1,002.50	63.0%	34.57	
1911	Dr. George A. Stewart	25	637.50	45.5%	25.50	345.84
1912	Dr. Alan M. Chesney	40	1,487.50	63.5%	37.19	83.34
1913	Dr. Henry W. Cave	29	1,077.50	55.8%	37.16	
1914	Dr. Alan C. Woods	37	1,313.00	54.4%	35.49	172.92
1915	Dr. Benjamin Tappan	33	882.00	47.1%	26.73	33.33
1916	Dr. J. Mason Hundley, Jr.	25	856.00	44.6%	34.24	308.33
1917	Dr. John Stifel	34	1,654.50	46.6%	48.66	430.00
1918	Dr. Amos R. Koontz	40	1,882.50	60.6%	47.06	235.01
1919	*Dr. Edward M. Hanrahan	30	665.00	39.0%	22.16	283.34
1920	Dr. Lay Martin	43	2,140.50	54.4%	49.78	741.67
1921	Dr. Cecil H. Bagley	32	1,610.00	39.5%	50.31	328.85
1922	Dr. Chester S. Keefer	38	1,112.50	55.1%	29.28	343.34
1923	Dr. Charles H. Peckham	43	1,030.00	52.4%	23.95	150.01
1924	Dr. T. Terry Burger	43	1,082.50	65.2%	25.17	134.37
1925	Dr. John V. Goode	40	1,572.50	58.0%	39.31	300.00
1926	Dr. Edmund P. H. Harrison, Jr.	28	1,736.25	47.5%	62.01	
1927	Dr. James Bordley, III	42	1,927.50	61.8%	45.89	208.34
1928	Dr. Francis W. Gluck	41	2,075.00	64.1%	50.61	33.34
1929	Dr. James G. Arnold, Jr.	38	1,060.00	61.3%	27.89	467.11
1930	Dr. James N. Brawner	40	2,508.00	63.5%	62.70	257.08
1931	Dr. Merrell L. Stout	30	1,105.00	45.5%	36.83	270.84
1932	Dr. R. Carmichael Tilghman	39	933.50	60.9%	23.94	110.00
1933	Dr. C. Bernard Brack	62	1,406.00	87.3%	22.68	166.67
1934	Dr. John Whitridge, Jr.	58	1,638.00	85.3%	28.24	254.82
1935	Dr. George S. Mirick	39	1,117.50	58.2%	28.65	30.00
1936	Dr. Palmer H. Futcher	53	1,352.50	81.5%	25.52	151.65
1937	Dr. J. Donald Woodruff	46	1,082.00	73.0%	23.52	542.51
1938	Dr. Edward H. Richardson, Jr.	39	671.50	55.7%	17.22	75.84
1939	Dr. William E. Grose	32	830.00	45.1%	25.94	225.00
1940	Dr. R. Paul Higgins, Jr.	38	632.50	58.5%	16.64	3.75
1941	Dr. Roger L. Greif	42	744.50	61.8%	17.73	370.84
1942	Dr. Douglas Carroll	38	684.50	52.1%	18.01	359.17
1943 (Feb.)	Dr. George H. Bunch, Jr.	40	618.00	57.1%	15.45	72.50
1943 (Nov.)	Dr. Jack M. Burnett	40	414.00	58.0%	10.10	41.67
1944	Dr. Joseph D. B. King	36	362.00	49.3%	10.06	6.67
1945	Dr. Frederick G. Germuth	37	415.00	46.8%	11.22	
1946	Dr. Victor A. McKusick	32	311.50	42.1%	9.73	
1947	Dr. Arthur A. Siebens	31	616.50	39.7%	19.89	
1948	Dr. Harold W. Baker	34	312.00	45.9%	9.18	
1949	Dr. William F. Fritz	34	288.50	49.3%	8.49	2.50
1950	Dr. Carol G. Johnson	32	252.00	45.1%	7.88	
1951	Dr. Charles P. Bugg	34	212.50	44.7%	6.25	
1952	Dr. Leonard M. Gaines, Jr.	23	137.00	29.1%	5.96	

*Deceased

SCHOOL OF HIGHER STUDIES DEPARTMENTS

Department	Agent	ROLL CALL				HOPKINS FUND TOTAL
		Donors	Total	Particip.	Average	
Art & Archaeology	Dr. Sarah E. Freeman	28	$164.50	8.2%	$5.88	
Biology	Dr. Charles D. Howell	103	624.17	22.8%	6.06	
Biophysics	Dr. J. H. Fitzgerald Dunning	2		15.4%		
Chemistry	Dr. Harry N. Holmes	256	3,934.25	26.9%	15.37	$45.83
Classics	Dr. James W. Poultney	36	327.50	17.1%	9.10	
Education	Mrs. Irene Davis Corwin	133	3,086.25	15.9%	23.20	
Engineering	Mr. John I. Yellott	198	861.25	20.3%	4.35	5.00
English	Dr. Calvin D. Linton	66	442.00	14.9%	6.70	
Geology	Dr. John B. Reeside, Jr.	76	944.00	27.0%	12.42	
German	Dr. Taylor Starck	34	177.00	30.4%	5.21	
History	Dr. Ollinger Crenshaw	56	1,584.50	13.3%	28.38	
Mathematics	Dr. C. H. Wheeler, III	56	420.50	19.6%	7.51	
Oceanography	Dr. J. H. Fitzgerald Dunning	1	2.00	4.3%	2.00	
Oriental Seminary	Dr. Frank R. Blake	49	463.00	30.1%	9.45	
Philosophy	Dr. Ray H. Dotterer	21	145.50	15.9%	6.93	
Physics	Dr. R. Bowling Barnes	115	1,075.50	24.1%	9.35	
Political Economy	Dr. Robert W. Thon, Jr.	55	617.95	15.6%	11.24	600.00
Political Science	Dr. E. Pendleton Herring	67	488.12	23.9%	7.18	
Psychology	Dr. F. Loren Smith	31	207.75	10.8%	6.70	25.00
Romance Languages	Dr. Guy E. Snavely	76	661.00	18.4%	8.70	
School for Advanced International Studies	Dr. J. H. Fitzgerald Dunning	1	10.00	1.1%	10.00	
Writing, Speech & Drama	Mr. Benjamin T. Sankey, Jr.	10	47.75	8.3%	4.78	

DISTRIBUTION OF GIFTS AS INDICATED BY DONORS

				Percent of Total	
UNIVERSITY					
1. UNRESTRICTED: for general use		$56,411.41		41.4	
2. HOMEWOOD SCHOOLS					
a. General purposes	$10,384.00				
b. Restricted purposes	8,092.50	18,476.50		13.6	
3. SCHOOL OF MEDICINE					
a. General purposes (Includes $3,261 received via the American Medical Education Foundation)	46,601.83				
b. Restricted purposes	2,872.25	49,474.08		36.3	
4. SCHOOL OF HYGIENE AND PUBLIC HEALTH					
a. General purposes	3,511.50				
b. Restricted purposes	5.00	3,516.50		2.6	
TOTAL			$127,878.49		93.9
HOSPITAL					
1. UNRESTRICTED: for general use		6,048.50			
2. RESTRICTED PURPOSES		750.00			
3. SCHOOL OF NURSING		1,459.01			
TOTAL			8,257.51		6.1
GRAND TOTAL			$136,136.00		
RECAPITULATION					
1. Unrestricted and General Purposes	$122,957.24				90.3
2. Restricted Purposes	13,178.76				9.7

ACCOUNTING OF EXPENSES

Salaries	$10,824.35
Printed and Processed Materials	3,779.58
Postage	2,704.55
Miscellaneous—Office Supplies, Telephone, etc.	307.64
TOTAL	$17,616.12

THE MONTH
at Johns Hopkins
A calendar of events
February 25—March 31

MEDICAL MEETINGS

JOHNS HOPKINS MEDICAL AND SURGICAL ASSOCIATION—1953 biennial meeting. On Friday and Saturday, Feb. 27–28, meetings will be held throughout the Medical Institutions. All medical departments of the Hospital will have special programs, exhibits, and demonstrations of new equipment. Professional people are invited to the scientific sessions. BANQUET (members only)—Lord Baltimore Hotel, Friday, Feb. 27. REUNIONS—Classes of 1902, '03, '27 and '28.

DOGUCHIE LECTURE—Thursday, March 5; at 5 p.m. (Hurd Hall). Dr. Esmond Long, director of the Phipps Institute, Philadelphia, will speak on "The History of Tuberculosis."

JOHNS HOPKINS MEDICAL SOCIETY—Monthly meeting, Monday, March 9, at 8:15 p.m. (Hurd Hall).

DELAMAR LECTURE—Wednesday, March 18, at 5 p.m. (School of Hygiene Auditorium). The speaker will be Dr. Bradford Hill.

DEICHES LECTURE—Thursday, March 19, at 5 p.m. (Remsen Hall, Homewood campus). Dr. Oron J. Hale, professor of history at the University of Virginia, will speak on "The American Impact on Postwar Germany." Sponsored by the Institute of the History of Medicine.

WILMER RESIDENTS' ANNUAL MEETING—Wednesday through Friday, March 25–27; meetings will be held chiefly in Hurd Hall.

VARSITY SPORTS

NOTE—No admission fee is charged at any Johns Hopkins home athletic events. Persons who wish to attend Hopkins games during the 1952–1953 University year may obtain a free season ticket by sending a stamped, self-addressed envelope to the Department of Physical Education and Athletics, the Johns Hopkins University, Baltimore 18, Md. Alumni should address their requests to the Alumni Relations Office, the Johns Hopkins University, Baltimore 18, Md.

BASKETBALL—Johns Hopkins vs. Loyola, Wednesday, Feb. 25 (away); Western Maryland, Saturday, Feb. 28 (away); Mason-Dixon Championships, Thursday through Saturday, March 5–7 (away).

FENCING—Johns Hopkins vs. Haverford, Saturday, Feb. 28 at 2 p.m. (Homewood Gymnasium); Middle Atlantic Championships, Saturday, March 7 (at Lafayette College).

WRESTLING—Mason-Dixon Championships, Friday and Saturday, Feb. 27–28 (Homewood Gymnasium).

LACROSSE—The season will open Saturday, April 4, when Johns Hopkins plays Loyola of Baltimore at Loyola. The first home game will be against Princeton at 2:30 p.m., Saturday, April 18.

JACK ENGEMAN

The Hopkins Hospital Dome

DRAMA

EMLYN WILLIAMS AS CHARLES DICKENS—Saturday, Feb. 28, at 2:30 p.m. and 8:30 p.m. (Maryland Casualty Auditorium, Keswick Road and Fortieth Street). Presented by the Johns Hopkins Playshop. Tickets for matinee—$1.01, $1.51, and $2.01; for evening—$1.51, $2.01, $2.52, and $3.02. Tickets may be obtained from the Playshop, Johns Hopkins University, Baltimore 18, or at Bonney Concert Bureau, 327 N. Charles St., Baltimore 1.

RELIGIOUS DRAMA—Monday, March 9, at 8:30 p.m. (Levering Hall). The speaker will be Laurlene Straughn Pratt, formerly with the Religious Drama Guild. Presented by the Johns Hopkins Playshop.

RUMPELSTILTSKIN—Saturday, March 28, at 10:30 a.m. and 3 p.m. (The Playshop, Homewood campus). A performance of the Children's Educational Theater. Tickets for children, $.35; for adults, $.80. Tickets may be obtained at Bonney Concert Bureau, 327 N. Charles St.

TELEVISION

The Johns Hopkins Science Review is being carried by the following television stations:

* Albuquerque: KOB
* Ames: WOI
Baltimore: WAAM
* Boston: WBZ
Chicago: WGN
Cleveland: WXEL
* Dallas: WFAA
* Houston: KPRC
* Indianapolis: WFBM
* Johnstown: WJAC
* Los Angeles: KTTV
* Louisville: WAVE
* Milwaukee: WTMJ
* Montreal: CBET
New York: WABD
* Norfolk: WTAR
* Omaha: WOOW
Philadelphia: WFIL
* Pittsburgh: WDTV
* Providence: WJAR
* Salt Lake City: KSL
* San Francisco: KPIX
Schenectady: WRGB
* Toronto: CELT
Washington: WTTG

* In these cities, consult newspapers or call the stations for day and time of program. In other cities, broadcast time is Mondays' 8:30 p.m., EST.

PROGRAMS (dates apply only to stations not starred in list above): New Developments in Space Travel—March 2. Diffraction Gratings, with John D. Strong, professor of astrophysics, and Wilbur Perry, of the astrophysics laboratory—March 9. Neurosurgery (to be produced in Montreal in cooperation with the Canadian Broadcasting Company)—March 16. Transistors—March 23. Tools of Science—March 30.

Probers Of The North

Continued from page 26

ing old magazines and yawning, waiting for instructions from his sponsor. "This project I'm supposed to be on is so secret that nobody'll tell me what it is," he says.

MORALE at Barrow is kept at a high level partly by the ARL investigators' fervent interest in their work and partly by the usual military formula: "mail, meals, and movies," in that order.

Mail is delivered fast, twice weekly. The meals are excellent. (A single typical week's dinner menus include lamb chops, Yankee pot roast, veal chops, baked spiced ham, pork chops, minute steak, and grilled New York steak; most surprisingly, the cooking is as good as the materials. Most of the investigators develop prodigious appetites at Barrow and gain weight while they are here.) Movies also are plentiful; when deliveries are normal, there's a new one every night. Their quality in Barrow is the same as elsewhere, but attendance in the camp movie theater is always heavy: for almost every investigator, going to the movies becomes a nightly ritual.

The principal recreations at ARL are talking about working, letter-writing, watching Eskimos, beard-growing, taking pictures, reading, and playing poker for tiny professorial stakes. The talk is characterized by the gustiness of the barracks and the pedantry of the classroom, often combined in deplorable puns, especially by Mr. Craig and Mr. Koranda. Occasionally the investigators visit the Eskimo village, as wallflowers at the native dances, or to buy stamps at the Barrow Post Office.

Loneliness does not appear to be a major problem at ARL. On the other hand, unloneliness sometimes is. In a small group of people in the middle of a wilderness, solitude can be difficult to find.

A psychologist might undertake to investigate the investigators while they investigate their environment—and the changing metabolism of the psychologist. The Arctic Research Laboratory is open to suggestions.

ROBERT M. MOTTAR

NEXT MONTH

With the first days of spring, a group of scientists will emerge from their laboratories and take to the open road, and then leave the road and invade unexplored sections of the countryside, in pursuit of the facts and raw materials around which their studies revolve. They are the geologists. Next month, in pictures, *The Johns Hopkins Magazine* will accompany one such group on a field trip to Harpers Ferry, where Virginia, West Virginia, and Maryland meet and where the Potomac River, centuries ago, was already running in its course when the Blue Ridge mountains were formed. Through photographs by Robert Mottar, you will share in their explorations along—and in—the river, on cliffs, and atop mountains. Look for the April picture story in

THE JOHNS HOPKINS MAGAZINE

He Went Out to Meet Them

WITH FLARES AND WHISTLES and blaring bugles, the Reds had been attacking fanatically all night. Wave after wave they came, in overwhelming numbers.

By dawn, Jerry Crump could see that his position alone was keeping them from overrunning L Company. Twice he went out to meet them with his bayonet. Once he retook a captured machine gun. And four times he left shelter to bring in wounded comrades.

Now, an enemy soldier crept close unobserved. He lobbed a grenade. It landed squarely among the wounded men. Without a second's hesitation, Corporal Crump threw himself upon it, smothered the explosion with his own body, and saved his four companions' lives.

"I got hurt," says Jerry Crump, "but I got back alive. Because our armed forces have the finest medical equipment in the world—even at the front. And *you* helped put it there by investing in United States Defense Bonds."

Bonds are savings. But they mean *production power*, too. Helping provide the arms and equipment and care of every kind that give a fighting man *more* than a fighting chance.

Corporal Jerry Crump U.S. Army Medal of Honor

Now E Bonds pay 3%! Now, improved Series E Bonds start paying interest after 6 months. And average 3% interest, compounded semiannually when held to maturity! Also, all *maturing* E Bonds automatically *go on* earning—at the new rate—for 10 *more* years. Today, start investing in United States Series E Defense Bonds through the Payroll Savings Plan at work.

Peace is for the strong! For peace and prosperity save with U.S. Defense Bonds!

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